

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:  
SEMICONDUCTOR ENERGY LABORATORY  
CO., LTD.

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**PCT**

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY  
(PCT Rule 43bis.1)

Date of mailing  
(day/month/year)

**28. 6. 2005**

Applicant's or agent's file reference  
**00000PCT7782**

**FOR FURTHER ACTION**

See paragraph 2 below

International application No.  
**PCT/JP2005/005298**

International filing date (day/month/year)  
**16.03.2005**

Priority date (day/month/year)  
**19.03.2004**

International Patent Classification (IPC) or both national classification and IPC  
**Int.Cl.<sup>7</sup> H01L 29/786, H01L 29/423, H01L 29/49, H01L21/288, H01L21/336**

Applicant

**SEMICONDUCTOR ENERGY LABORATORY CO., LTD.**

**1. This opinion contains indications relating to the following items:**

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

**2. FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

**3. For further details, see notes to Form PCT/ISA/220.**

Date of completion of this opinion		<b>10.06.2005</b>	
Name and mailing address of the ISA/JP	Authorized officer	4L	9361
<b>Japan Patent Office</b> 3-4-3, Kasumigaseki, Chiyoda-ku, Tokyo 100-8915, Japan	KAZUNARI TANADA Telephone No. +81-3-3581-1101 Ext. 3498		

WRITING OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/005298

Box No. I Basis of the opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
 This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material
    - a sequence listing
    - table(s) related to the sequence listing
  - b. format of material
    - in written format
    - in computer readable form
  - c. time of filing/furnishing
    - contained in the international application as filed.
    - filed together with the international application in computer readable form.
    - furnished subsequently to this Authority for the purposes of search.
3.  In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

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**Box No. IV      Lack of unity of invention**

1. In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has:

- paid additional fees  
 paid additional fees under protest  
 not paid additional fees

2.  This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is

- complied with  
 not complied with for the following reasons:

The "special technical feature" of claims 1-29 relates to "forming a second region by irradiating the substance with light to modify a part of the substance surface wherein the light has a wavelength which is absorbable by the light-absorbing material, and forming a pattern on the second region by discharging a compound including a pattern forming material". However, this feature is disclosed in a prior art document US 6399257 B1(CANON KABUSHIKI KAISHA), 2002.06.04, Column 3-7. So the feature cannot be a special technical feature.

And there exists no special technical feature linking the inventions of claims 1-29 as to form a single general inventive concept among the inventions.

Furthermore, the "special technical feature" of claims 18-29 relates to "a thin film transistor comprising: a first conductive layer provided over a light-transmitting substrate; an insulating layer over the light-transmitting substrate and the first conductive layer; a substance including a light-absorbing material over the insulating layer; a second conductive layer selectively over the substance; and a semiconductor layer over the substance and the second conductive layer". However, this feature is disclosed in a prior art document JP 02-130961 A(CANON KABUSHIKI KAISHA), 1990.05.18., FIG 1(Family: none). So the feature cannot be a special technical feature.

And there exists no special technical feature linking the inventions of claims 18-29 as to form a single general inventive concept among the inventions.

Therefore there are no technical relationship which is considered as "special technical feature"(PCT rule 13.2) among the claims 1-29. So this application contains the following groups of invention which are not so linked as to form a single inventive concept under PCT rule 13.2.

Group 1:Claims 1,4; Group 2:Claim 2; Group 3:Claim 3; Group 4:Claim 5; Group 5:Claim 6; Group 6:Claim 7;  
Group 7:Claim 8; Group 8:Claim 9; Group 9:Claim 10; Group 10:Claims 11,13; Group 11:Claim 12;  
Group 12:Claim 14; Group 13:Claim 15; Group 14:Claim 16; Group 15:Claim 17; Group 16:Claims 18,20;  
Group 17:Claim 19; Group 18:Claim 21; Group 19:Claims 22,24; Group 20:Claim 23; Group 21:Claim 25;  
Group 22:Claims 26,28; Group 23:Claim 27; Group 24:Claim 29

4. Consequently, this opinion has been established in respect of the following parts of the international application:

- all parts.  
 the parts relating to claims Nos. 1, 4

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Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	YES
	Claims	NO
Inventive step (IS)	Claims	YES
	Claims	NO
Industrial applicability (IA)	Claims	YES
	Claims	NO

2. Citations and explanations

D1 : US 6399257 B1(CANON KABUSHIKI KAISHA),2002.06.04, Columns 3-7 & JP 2000-258622 A

Claims 1,4

The subject matters of claim 1 and 4 do not appear to be novel with respect to D1.

D1 discloses "forming a second region by irradiating the substance with light to modify a part of the substance surface wherein the light has a wavelength which is absorbable by the light-absorbing material, and forming a pattern on the second region by discharging a compound including a pattern forming material".

**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.

Continuation of: International Patent Classification

H01L21/8234, H01L 21/8238, H01L 27/088, H01L 27/092, G02F1/13, 1/1368,  
G09F9/00